Important Information

The Olympic Smart Scale is designed to allow field servicing down to the printed circuit board (PCB) level. These instructions will assist you in isolating the problem PCB or component. The faulty board must be returned to Olympic Medical for repair or replacement.

In order to identify the problem, please follow the "Troubleshooting" and the "Theory of Operation" sections carefully.

Static and Contamination: The integrated circuits and semiconductors on the PCB's can be damaged by electrostatic discharge or contamination by body oil. Always observe proper handling precautions at all times.

Calibration

The scale can be accurately calibrated with any size tray in place, and the various size trays can be used interchangeably. However, if you have a "Newborn Safety Tray" (Cat. No. 56310), it is recommended that the scale be calibrated with this tray on it.

Rationale

As with any precision electronic instrument, the Smart Scale can drift out of calibration over time. Since no electronic scale re-calibrates itself automatically, the only way to assure correct re-calibration is to place an accurate, known weight on the scale and make the required internal adjustments so that the scale displays the correct weight.

Calibration Weight

The Smart Scale calibration procedure requires a weight of 7500 ± 0.5 gm. If not available locally, this calibration weight may be ordered from Olympic Medical Corp. (Cat. No. 56315).

Calibration Upon Receipt

The Smart Scale was calibrated at our factory in Seattle prior to shipment. However, it should be recalibrated before being put into service because local variations in the force of gravity can affect calibration by as much as 20 gm.

Calibration Frequency

Smart Scale calibration should be checked every six months for the first year. Then the frequency can be adjusted based on how far the Smart Scale has drifted. If it is staying within 1 or 2 grams, the calibration frequency can be reduced to every 12 months. For larger weight drift, increase the calibration frequency. If the drift is very large, check the Troubleshooting Section.

Calibration Procedure

Calibration Switch Access:
Located on the lower right side (fig. 4-1). Remove hatch by unscrewing the two screws.

Removing the hatch allows access to the four trim pots and quad DIP switch used in the calibration procedures (fig. 4-2).

With the scale turned off:

1. Set scale on a firm, level surface and protect from moving air. Ambient temperature should be 70° to 75°F (21.1° to 23.8°C).

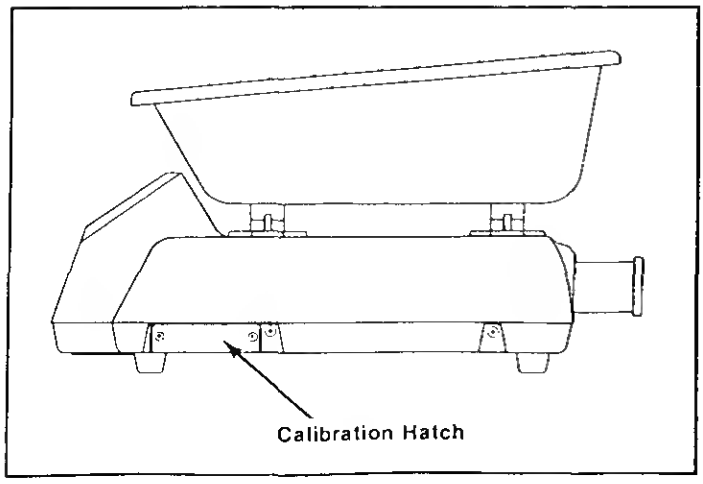

Fig. 4-1

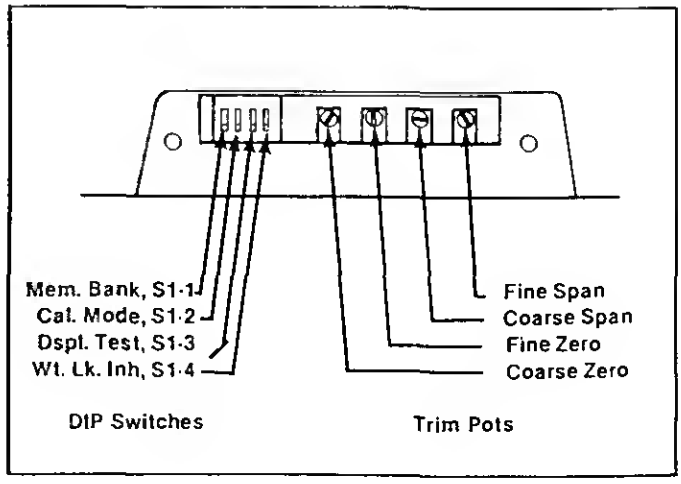

Fig. 4-2

2. Mechanically adjust the fine zero and span calibration pots to their mid-range (fig. 4-2).

3. Exercise the load cell by placing the 7.5 kg weight on the scale for 10 seconds and then removing the weight for 10 seconds. Repeat this three times at the center of the tray and once in each corner.

4. Turn on S1-4 and S1-2 (up). S1-1 and S1-3 should be off (down).

Turn on the scale:

1. Allow at least 30 seconds warm up.

2. Place 7.5 kg test weight on the center of the tray. Allow the display to stabilize for 10 seconds.

3. Adjust the COARSE ZERO pot so the display reads 32,768 ± 30 counts.

4. Adjust the FINE ZERO pot so the display reads 32,768 ± 4 counts.

5. Press ZERO once. The display will read 0 ± 4 counts maximum.

6. Remove the 7.5 kg (Do not press ZERO) and wait 10 seconds to give the load cell a chance to fully return to zero.

7. Adjust the COARSE SPAN pot until the display reads − 30,000 ± 30 counts.

8. Adjust the FINE SPAN pot until the display reads − 30,000 ± 4 counts.

9. Press the ZERO switch. The display should read 27¢ ± 4 counts. If not, repeat step 2 through step 9, omitting the coarse adjustments of steps 3 and 7.

10. Return all DIP switches to their off (down) position. Replace calibration hatch.

Smart Scale Specifications:

Accuracy (nominal):

± 1 gm (0.20%) @ 1-5,000 gms
± 4 gms (0.027%) @ 5,000-15,000 gms

Note: Accuracy means how closely a calibrated scale can reproducibly measure true (absolute) weight over a specified range.

Resolution: 1 gram

Note: Resolution means the smallest weight change a scale can detect. This is not necessarily the smallest unit the scale displays.